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09/195,728

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STEVEN M. DRUCKER

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07/06/2004

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EXAMINER

YANG, RYAN R

ART UNIT

PAPER NUMBER

2672

21

DATE MAILED: 07/06/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/195,728

Applicant(s)

DRUCKER ET AL.

Examiner

Ryan R Yang

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 19 April 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 and 24-39 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-22, 24-39 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 October 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

1. This action is responsive to communications: Amendment filed 4/19/2004. This action is final.
2. Claims 1-39 are pending in this application. Claims 1, 16, 27, 34 and 37 are independent claims. In the Amendment, filed on 4/19/2004, claims 1, 3, 5, 13, 16, 18, 22, 26, 27, 32-34, 36, 37 and 39 were amended, claim 23 was canceled, and claims 43-46 were added.
3. The present title of the invention is "View Dependent Tiled Textures" as filed originally.

Claim Rejections - 35 USC § 103

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
5. Claims 1, 3-7, 9, 16-17, 19, 27-28, 30, 34-35, 43 and 45 are rejected under 35 U.S.C. 103(a) as being unpatentable over lwase et al. (5,616,079).

As per claim 1, lwase et al., hereinafter lwase, discloses a computer-readable medium having stored thereon a tile data structure for a tile representing an image texture for tiled texture mapping, comprising:

plural tile data structures representing plural respective views of the image texture displayed together on a display screen immediately adjacent each other ("The game space setting means sets the game space by selecting one of this plurality of map

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segment patterns on the basis of the position of the vehicle and the player's line-of-sight direction ... In this state, if the player's line-of-sight direction changes so that it is now within the second line-of-sight directional range, the configuration is such that now the map segment pattern P22 is selected", column 5, line 7-27, where the segmented pattern is adjacent tiles as in Figure 8 and P11 and P21 are of different views).

As for texture image, since Iwase discloses using an image rendering unit (Figure 19- 516), and as it is well known in the art that an image rendering device is used to render color or shading of an image, it is obvious the image rendered is a texture image.

6. As per claim 3, Iwase demonstrated all the elements as applied to the rejection of independent claim 1, supra, and further discloses the plural respective views correspond to a range of user viewing angles that are displayed together on the display screen, each tile data structure corresponding to a segment in the range of user viewing angles (Figure 7 where the viewing angle of a segment is based on a range).

7. As per claim 4, Iwase demonstrated all the elements as applied to the rejection of claim 3, supra, and further discloses the segments in the range of user viewing angles are not equal (Figure 9 where the segments are not equal).

8. As per claim 5, Iwase demonstrated all the elements as applied to the rejection of claim 4, supra, and further discloses viewing angles are with respect to a predetermined reference and the segments closest to the predetermined reference are smaller than the segments farthest from the predetermined reference orientation (Figure 9 shows that for

the uneven surface, the segments closer to the view point is smaller than the segments further away).

9. As per claim 6, Iwase demonstrated all the elements as applied to the rejection of claim 3, supra, and further discloses the segments in the range of user viewing angles are equal (Figure 9 shows the segments within the viewing angle and at the same surface are equal).

10. As per claim 7, Iwase demonstrated all the elements as applied to the rejection of claim 3, supra, and further discloses the range of viewing angles extends over viewing angles of positive and negative magnitudes relative to a viewpoint position ("the map segment pattern shown in FIG. 11 is selected when the player's fighter is positioned within a shaded range H, and the player's line-of-sight direction is between -11.25 degrees and 11.25 degrees", column 13, line 35-39).

11. As per claim 9, Iwase demonstrated all the elements as applied to the rejection of independent claim 1, supra, and further discloses the plural respective views are within only one angular dimension ("the map segment pattern shown in FIG. 11 is selected when the player's fighter is positioned within a shaded range H, and the player's line-of-sight direction is between -11.25 degrees and 11.25 degrees", column 13, line 35-39).

12. As per claim 16, Iwase discloses a computer method of applying a texture map to an image surface in a graphics image rendered on a computer display screen, comprising:

identifying plural adjacent regions of the image surface to which regions the texture map is to be applied ("The game space setting means sets the game space by

selecting one of this plurality of map segment patterns on the basis of the position of the vehicle and the player's line-of-sight direction ... In this state, if the player's line-of-sight direction changes so that it is now within the second line-of-sight directional range, the configuration is such that now the map segment pattern P22 is selected", column 5, line 7-27, where the segmented pattern is adjacent tiles as in Figure 8 and P11 and P21 are of different views);

determining a user viewing angle for each of the plural regions (P11 and P21 are of different viewing angles);

correlating each viewing angle with a texture map tile corresponding to the viewing angle ("the configuration is such that now the map segment pattern P22 is selected", column 5, line 26-27); and

displaying the texture map tiles together at the adjacent regions on the computer display screen to form the texture map on the image surface (Since P11 and P21 are a plurality of segmented image presented as an image surface).

As for texture image, since lwase discloses using an image rendering unit (Figure 19- 516), and as it is well known in the art that an image rendering device is used to render color or shading of an image, it is obvious the image rendered is a texture image.

13. As per claim 17, lwase demonstrated all the elements as applied to the rejection of independent claim 16, supra, and further discloses the texture map tile corresponding to the viewing angle for each region is one of plural predetermined texture map tiles

stored in a computer memory (P11 is a segment pattern previously stored, column 5, line 3-12).

14. As per claim 19, Iwase demonstrated all the elements as applied to the rejection of independent claim 16, supra, and further discloses determining a viewing angle for each region includes determining only one viewing angle for the region corresponding to angles within only one imaging plane (Figure 7).

15. As per claim 27, Iwase discloses a method of generating a tile data structure in a computer readable medium representing an image texture for a tiled texture mapping, comprising:

determining plural selected viewing angles for viewing together plural adjacent tiles of the image texture ("The game space setting means sets the game space by selecting one of this plurality of map segment patterns on the basis of the position of the vehicle and the player's line-of-sight direction ... In this state, if the player's line-of-sight direction changes so that it is now within the second line-of-sight directional range, the configuration is such that now the map segment pattern P22 is selected", column 5, line 7-27, where the segmented pattern is adjacent tiles as in Figure 8 and P11 and P21 are of different viewing angles);

correlating each of the plural selected viewing angles to a predetermined range of viewing angles that includes the selected viewing angle, immediately successive predetermined viewing angle ranges being correlated to adjacent tiles of the image texture ("the configuration is such that now the map segment pattern P22 is selected", column 5, line 26-27); and

forming for each of the selected viewing angles a data structure that includes plural projections of the image texture relative to the selected viewing angles of plural adjacent tiles to be viewed together (Since P11 and P21 are a plurality of segmented image corresponding to a viewing angle presenting an image surface).

As for texture image, since lwase discloses using an image rendering unit (Figure 19- 516), and as it is well known in the art that an image rendering device is used to render color or shading of an image, it is obvious the image rendered is a texture image.

16. As per claim 28, lwase demonstrated all the elements as applied to the rejection of independent claim 27, supra, and further discloses the image texture includes a front surface with predetermined dimensions and the projections of the image texture relative to the selected viewing angles maintains the predetermined dimensions of the front surface of the image texture (Figure 8 where the image projected on the surface maintains the same dimension).

17. As per claim 30, lwase demonstrated all the elements as applied to the rejection of independent claim 27, supra, and further discloses the plural respective views are within only one angular dimension ("the map segment pattern shown in FIG. 11 is selected when the player's fighter is positioned within a shaded range H, and the player's line-of-sight direction is between -11.25 degrees and 11.25 degrees", column 13, line 35-39).

18. As per claim 34, Iwase discloses in a computer readable medium, computer software instructions for applying a texture map to an image surface in a graphics image rendered on a computer display screen (Figure 1 102), comprising:

software instructions for identifying plural adjacent regions of the image surface to which regions the texture map is to be applied ("The game space setting means sets the game space by selecting one of this plurality of map segment patterns on the basis of the position of the vehicle and the player's line-of-sight direction ... In this state, if the player's line-of-sight direction changes so that it is now within the second line-of-sight directional range, the configuration is such that now the map segment pattern P22 is selected", column 5, line 7-27, where the segmented pattern is adjacent tiles as in Figure 8 and P11 and P21 are of different views);

software instructions for determining a viewing angle for each of the plural regions (P11 and P21 are of different viewing angles);

software instructions for correlating each viewing angle with a texture map tile corresponding to the viewing angle ("the configuration is such that now the map segment pattern P22 is selected", column 5, line 26-27); and

software instructions for displaying together the texture map tiles corresponding to the viewing angles at the adjacent regions on the computer display screen to form the texture map on the image surface (Since P11 and P21 are a plurality of segmented image presented as an image surface).

19. As per claim 35, Iwase demonstrated all the elements as applied to the rejection of independent claim 34, supra, and further discloses the texture map tile corresponding

to the viewing angle for each region is one of plural predetermined texture map tiles stored in a computer memory ("a plurality of map segment patterns are previously stored to correspond with th positional range", column 5, line 3-5).

20. As per claim 43, lwase discloses a computer readable medium, computer software instructions for applying a texture map to an image surface in a graphics image for rendering on a computer display screen, the computer software instructions comprising:

identifying an array of regions of the image surface to which the texture map is to be applied ("The game space setting means sets the game space by selecting one of this plurality of map segment patterns on the basis of the position of the vehicle and the player's line-of-sight direction ... In this state, if the player's line-of-sight direction changes so that it is now within the second line-of-sight directional range, the configuration is such that now the map segment pattern P22 is selected", column 5, line 7-27, where the segmented pattern is adjacent tiles as in Figure 8 and P11 and P21 are of different views);

determining a projection viewing angle for each region of the array (P11 and P21 are of different viewing angles);

displaying a selected texture map tile at each region on the computer display screen to form the texture map on the image surface, the selected texture map tile corresponding to the determined projection viewing angle for the region (Since P11 and P21 are a plurality of segmented image presented as an image surface).

As for texture image, since Iwase discloses using an image rendering unit (Figure 19- 516), and as it is well known in the art that an image rendering device is used to render color or shading of an image, it is obvious the image rendered is a texture image.

21. As per claim 45, Iwase discloses a computer-readable medium having stored thereon a tile data structure for a tile representing an image texture for tiled texture mapping, comprising:

an array of plural tile data structures for displaying on a display screen, the plural data structures comprising a first tile data structure representing a first projection view of the image texture based upon a first viewing angle and a second tile data structure representing a second projection view of the image texture based upon a second viewing angle, the first viewing angle being different from the second viewing angle ((“The game space setting means sets the game space by selecting one of this plurality of map segment patterns on the basis of the position of the vehicle and the player's line-of-sight direction ... In this state, if the player's line-of-sight direction changes so that it is now within the second line-of-sight directional range, the configuration is such that now the map segment pattern P22 is selected”, column 5, line 7-27, where the segmented pattern is adjacent tiles as in Figure 8 and P11 and P21 are of different views).

As for texture image, since Iwase discloses using an image rendering unit (Figure 19- 516), and as it is well known in the art that an image rendering device is

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used to render color or shading of an image, it is obvious the image rendered is a texture image.

22. Claims 2, 8, 10-12, 15, 18, 20-24, 26, 29, 31, 33, 36-37, 39, 44 and 46 are rejected under 35 U.S.C. 103(a) as being unpatentable over lwase et al. as applied to claim 1 above, and further in view of Van Overveld (6,049,337).

23. As per claims 2, 24, 29, 37, 44 and 46, lwase demonstrated all the elements as applied to the rejection of independent claims 1, 16, 27, 34, 43 and 45, supra, respectively.

lwase discloses a medium representing an image texture for tiled texture mapping. It is noted that lwase does not explicitly disclose "the plural respective views of the image texture are based upon oblique-parallel projections of the image texture", however, this is known in the art as taught by Van Overveld. Van Overveld discloses a method of simulating a texture image in which the view of the surface is parallaxically (Abstract).

Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Van Overveld into lwase because lwase discloses a medium representing an image texture for tiled texture mapping and Van Overveld disclose the view of the surface can be changed to oblique parallel projection in order to obtain an image in perspective.

24. As per claim 8, lwase demonstrated all the elements as applied to the rejection of dependent claim 7, supra.

As for the segments of viewing angles of positive magnitudes to which tile data structures correspond are matched one-to-one with the segments of viewing angles of negative magnitudes to which tile data structures correspond, it is notoriously well known in the art to have the image with a view of positive angle to have an equivalent match of the image with a view of negative angle in order to save memory space.

25. As per claim 10, Iwase demonstrated all the elements as applied to the rejection of dependent claim 9, supra.

As for the one angular dimension is a horizontal angular dimension corresponding to angles within a horizontal imaging plane, since the horizontal angular dimension is a notoriously well known angular dimension, it would have been obvious to one of ordinary skill in the art to use the dimension in order to view an image.

26. As per claims 11 and 31, Iwase demonstrated all the elements as applied to the rejection of independent claim 1 and 27, supra, respectively.

As for the plural respective views are within only two angular dimensions, since Iwase discloses the plural respective view could be in one dimension, it would have been obvious to extend it to two dimension in order to have a wider perspective of the image.

27. As per claim 12, Iwase demonstrated all the elements as applied to the rejection of dependent claim 11, supra.

As for the two angular dimensions are a horizontal angular dimension corresponding to angles within a horizontal imaging plane and a vertical angular dimension corresponding to angles within a vertical imaging plane, since the horizontal

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and vertical angular dimensions are notoriously well known angular dimensions, it would have been obvious to one of ordinary skill in the art to use these dimensions in order to view an image.

28. As per claims 15, 26, 33 and 39, Iwase demonstrated all the elements as applied to the rejection of independent claims 1, 16, 27 and 34, supra, respectively.

As for the plural respective views of the image texture are based upon manually formed renderings of the image texture, since manually formed renderings of the image texture is notoriously known in the art, it would have been obvious to one of ordinary skill in the art to use it in order to generate a personalized image.

29. As per claims 18 and 36, Iwase demonstrated all the elements as applied to the rejection of independent claims 16 and 34, supra, respectively.

As for the texture map tile corresponding to the viewing angle for each region is calculated based upon the determined viewing angle, it is obvious that the texture map tile retrieved should correspond to the viewing angle to have a correct representation of the image.

30. As per claim 20, Iwase demonstrated all the elements as applied to the rejection of dependent claim 19, supra.

As for the one viewing angle is a horizontal viewing angular corresponding to angles within a horizontal imaging plane, since the horizontal angular dimension is a notoriously well known angular dimension, it would have been obvious to one of ordinary skill in the art to use the dimension in order to view an image.

31. As per claim 21, Iwase demonstrated all the elements as applied to the rejection of independent claim 16, supra.

As for determining a viewing angle for each region includes determining two viewing angles corresponding to angles within two transverse imaging planes, since Iwase discloses the plural respective view could be in one viewing angle, it would have been obvious to extend it to two viewing angle in order to have a wider perspective of the image.

32. As per claim 22, Iwase demonstrated all the elements as applied to the rejection of dependent claim 21, supra.

As for the two viewing angles are a horizontal viewing angle and a vertical viewing angle corresponding to angles within horizontal and vertical imaging planes, respectively, since the horizontal and vertical angle are notoriously well known angular dimension, it would have been obvious to one of ordinary skill in the art to use these dimensions in order to view an image.

33. As per claim 23, Iwase demonstrated all the elements as applied to the rejection of independent claim 16, supra.

As for determining a viewing angle for each region includes determining only one viewing angle for the region corresponding to angles within only one imaging plane, it is obvious that the texture map tile retrieved should correspond to one viewing angle to have a correct representation of the image.

34. As per claim 24, Iwase demonstrated all the elements as applied to the rejection of independent claim 16, supra.

As the texture map tile corresponding to the viewing angle is of a predetermined tile structure and includes an oblique parallel projection of the predetermined tile structure, the method is notoriously well known in the art and would have been obvious to one of ordinary skill in the art to use the method in order to obtain an image in perspective.

35. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Iwase et al. as applied to claim 1 above and further in view of Strandberg.

36. As per claim 13, Iwase demonstrated all the elements as applied to the rejection of independent claim 1, supra.

Iwase discloses a medium representing an image texture for tiled texture mapping. It is noted that Iwase does not explicitly disclose the image texture includes an outer surface and the outer surface is of the same dimension in each of the plural respective views of the image texture, however, this is known in the art as taught by Strandberg. Strandberg discloses "the segmented drawings are representative of different positions within the sphere of a performance" (Figure 2 where the displayed pictures are the outer face of an image and they are all at the same dimension).

37. Claims 14, 25, 32 and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Iwase et al. as applied to claim 1 above and further in view of Cosatto et al. (5,995,119).

38. As per claims 14, 25, 32 and 38, Iwase demonstrated all elements as applied in the rejection of independent claims 1, 16, 27 and 34, respectively, supra.

lwase discloses a medium representing an image texture for tiled texture mapping. It is noted that lwase does not explicitly disclose using morphing technique to generate projections, however, this is known in the art as taught by Cosatto et al., hereinafter Cosatto, Cosatto discloses an image generating method in which morphing art used, column 2, line 50-65.

Thus, it would have been obvious to one of ordinary in the art at the time the invention was made to incorporate the teaching of Cosatto into lwase because lwase discloses a medium representing an image texture for tiled texture mapping and Cosatto discloses morphing can be used in order to make generating in between image possible.

Response to Amendment

39. Applicant's arguments filed 4/19/2004 have been fully considered but they are not persuasive.

As for claims 1, 16, 27 and 34, applicant alleges lwase does not suggest texture mapping. In reply, examiner notes, in Figure 19- 516, lwase uses an image rendering device. Since it is notoriously well known in the art that an image rendering device is used to render color or shading of an image, it is obvious the image rendered is a texture image.

Conclusion

40. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

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41. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Inquiries

42. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Ryan Yang** whose telephone number is **(703) 308-6133**.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Michael Razavi**, can be reached at **(703) 305-4713**.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

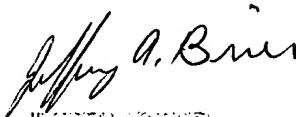
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(703) 872-9314 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 305-47000377.

Ryan Yang
June 28, 2004


JEFFREY A. BRUES
PRIMARY EXAMINER